



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 725,470	11 30 2000	Sang-Duk Lee	6192.0169.AA	1695

7590 02 04 2003

McGuireWoods LLP  
1750 Tysons Blvd  
Suite 1800  
McLean, VA 22102

EXAMINER
----------

RUDE, TIMOTHY L

ART UNIT	PAPER NUMBER
----------	--------------

2871

DATE MAILED: 02/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/725,470

Applicant(s)

LEE ET AL.

Examiner

Timothy L Rude

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 23 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-5, 8, 9, 12-14 and 23-27 is/are rejected.
- 7) ☐ Claim(s) 6, 7, 10, 11 and 15-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claims*

1. Claims 1-23 are amended. Claims 24-27 are added.

### *Claim Objections*

2. Claim 25 is objected to because of the following informalities: The last sentence of the claim includes "for axing the liquid crystal display panel". For examination purposes, the recitation shall be interpreted as -- for fixing the liquid crystal display panel -- . Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

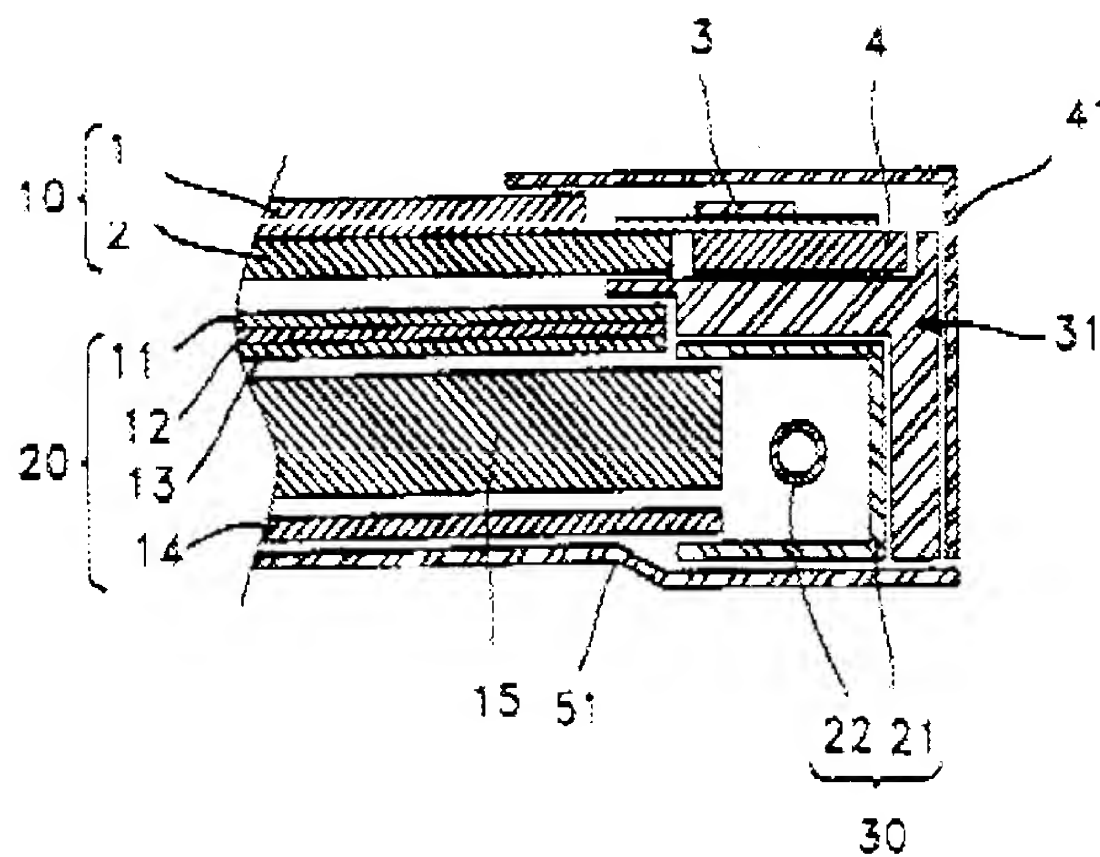
3. Claims 1-5, 8, 9, 12-14, and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee USPAT 5,966,191 in view of Hashimoto USPAT 5,442,470.

As to claims 1-4 and 27, Lee discloses in Figure 2 a liquid crystal display (LCD) device, comprising: a liquid crystal display panel, 1 and 2, and a flexible printed circuit (not labeled item between 2 and 3), attached to said liquid crystal display (LCD) panel,

Art Unit: 2871

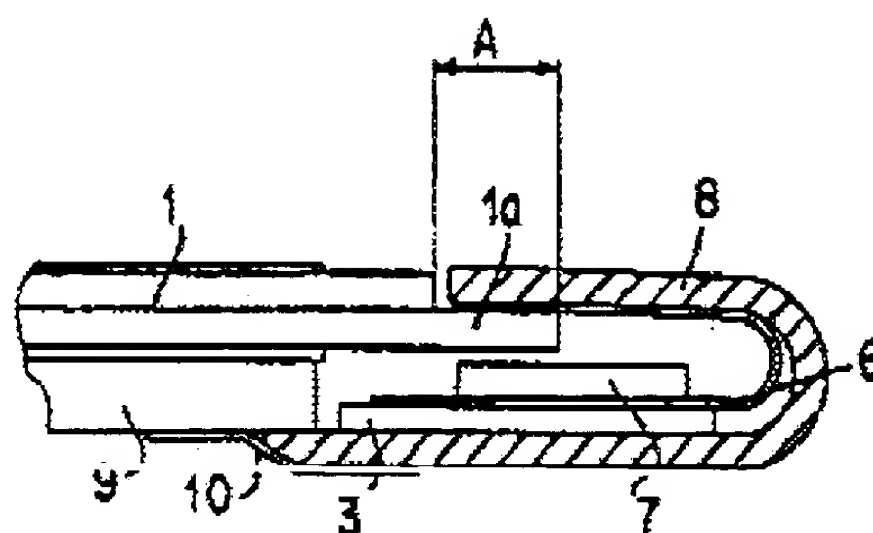
for applying driving signals to said liquid crystal display panel; a light guide plate and lamp assembly, 15 and 30, (Applicant's back light assembly) for providing a light to said LCD panel; a mold frame for receiving said liquid crystal display panel and said back light assembly; a chassis, 41, coupled to said mold frame, for fixing said liquid crystal display panel and said back light assembly to said mold frame.

FIG. 2



Lee does not explicitly disclose a support means for supporting said flexible circuit board towards said mold frame.

Hashimoto discloses (summary of the invention, col. 2, line 31 through col. 3, line 26) an embodiment shown in Figure 4 (col. 5, line 18 through col. 7, line 52).



**FIG. 4**

Figure 4 of Hashimoto shows a liquid crystal display panel comprising: a flexible printed circuit, 6, which is attached to the liquid crystal display panel, for applying driving signals to said liquid crystal display panel which is curved into a recess which is deeper in the upper end of the outer side to receive a protruding portion, 7, in order to minimize weight and size (summary of the invention, col. 2, line 31 through col. 3, line 26) and to protect the circuits (col. 5, lines 4-17); and a frame member, 8, that has a moderate level of resiliency for nipping the liquid crystal display panel, 1, and the circuit board, 3, (col. 5, lines 58-68) (Applicant's support means for supporting the flexible circuit board towards the mold frame) to provide greater durability and resistance to vibration and impacts.

Hashimoto is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a flexible printed circuit board curved into a recess which is deeper in the upper end of the outer side to receive a protruding portion, and a support means to protect the circuits and to provide greater durability and resistance to vibration and impacts.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Lee with the flexible printed circuit board curved into a recess which is deeper in the upper end of the outer side to receive a protruding portion of Hashimoto and the support means of Hashimoto to protect the circuits and to provide greater durability and resistance to vibration and impacts.

As to claim 5, mere direction of bend of a separating support member separated from the chassis is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 8, mere use of a fixing film in which one end thereof is attached to the inner surface of the chassis and the other end thereof is fixed to the bottom surface of the mold frame, pressing the flexible circuit board towards the inner side of the receiving recess is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied

upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 9, mere use of a bonding material or a bonding tape for fixing the bottom surface of the mold frame and the end portion of the fixing film which is opposite to the bottom surface of the mold frame is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 12, mere use of a resilient member which fixes the flexible circuit board installed between the rear side surface of the flexible circuit board which is received in the receiving recess and the inner side surface of the chassis is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 13, mere use of an integral support member which is fixed to the chassis which is provided at a side wall portion of the chassis which corresponds to the flexible circuit board is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 14, mere use of an integral support member comprised of a resilient material is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 23, mere use of an integrated printed circuit board having a source portion for providing a data driving signal to the liquid crystal display panel through a data line of the liquid crystal display panel and a gate portion for providing a gate driving signal to a gate line of the liquid crystal panel, and the flexible circuit board is a gate



side flexible circuit board which is attached to the gate side of the liquid crystal display panel to transfer the gate driving signal from the integrated printed circuit board to the liquid crystal display panel is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claims 24 and 26, the mere addition of a second flexible circuit board attached to a second portion of the LCD panel is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 25, the mere bending of the flexible printed circuit board perpendicular to the LCD is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are

Art Unit: 2871

therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

***Allowable Subject Matter***

4. Claims 6, 7, 10, 11, and 15-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 6, 7, 10, 11, and 15-22, prior art of record did not disclose, alone or in combination, a LCD device comprising the specific design features of engaging holes of predetermined depth in an engaging recess, engaging plates on both sides of the fixing body, a penetrating hole in a fixing film, a number of circuit boards protruded and integral with a plurality of fixing films, etc. Those claimed design feature recitations are not considered obvious design alternatives given Lee in view of Hashimoto.

The closest reference is Hashimoto, but Hashimoto does not disclose nor render obvious the level of design specificity of engaging holes of predetermined depth in an engaging recess, engaging plates on both sides of the fixing body, a penetrating hole in a fixing film, a number of circuit boards protruded and integral with a plurality of fixing films, etc. found in claims 6, 7, 10, 11, and 15-22.

Art Unit: 2871

***Response to Arguments***

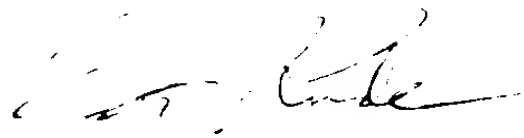
5. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (703) 305-0418. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8745 for regular communications and (703) 308-7725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



Timothy L Rude  
Examiner  
Art Unit 2871

TLR  
January 24, 2003

